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Abstract

The characterization and modeling of the indoor/outdoor channel is not an easy task. Moreover the dynamic variation of the received signal within the environment requires the use of statistical models for the design and analysis. There are several propagation models so far proposed based on ray optics and theory of diffraction. This report reviews the ray tracing techniques that can be used for EM analysis of the indoor environments. Since the signal propagation in a medium can be modeled in terms of open cavities, the approaches used for the EM analysis of propagation mechanisms in open cavities are also included. Moreover the methods proposed for studying the effect of conducting wire present in a channel on the signal propagation are studied.